PYQ (Solution)

2022

1.(a) Logic : 1st no. = (2nd no.) - (3rd no.)
(20,6,4,) $\Rightarrow$ $20= 6^2 - 4^2$
(24 ,7,5) $\Rightarrow$ $24 = 7^2 - 2^2$
Similarly,
(65,9,4) $\Rightarrow$ $65 = 9^2 - 4^2$

2.(b) Logic : $\{n:(n-1)^2\}$
(19 : 324) $\Rightarrow$ $(19-1)^2 = 324$
(25 : 576) $\Rightarrow$ $(25-1)^2 = 576$
Similary,
(9 : ?) $\Rightarrow$ $(9-1)^2 = 64$

3.(c) Logic : (2nd no. + 3rd no.) × 2 = 1st no.
(240,55,65) $\Rightarrow$ (55+65) × 2 = 240
(320,85,75) $\Rightarrow$ (85+75) × 2 = 320
Similarly,
(160,35,45) $\Rightarrow$ (35 + 45) × 2 = 160

4.(c) Logic : a:b $\Rightarrow$ 5:3

In 35 : 21 $\Rightarrow \left(\frac{35}{7}\right) : \left(\frac{21}{7}\right) \Rightarrow$ 5:3

In 60 : 36 $\Rightarrow \left(\frac{60}{12}\right) : \left(\frac{36}{12}\right) \Rightarrow$ 5:3

In 40 :24 $\Rightarrow \left(\frac{40}{8}\right) : \left(\frac{24}{8}\right) \Rightarrow$ 5:3

5.(b) Logic : $\{n : n^2 : n^3\}$
(9,81,729) $\Rightarrow$ $(9, 9^2, 9^3)$
(14,196,2744) $\Rightarrow$ $(14 , 14^2 , 14^3)$
Similarly,
(17,289,4913) $\Rightarrow$ $(17,17^2 ,17^3)$

6.(c) Logic : 2nd number + 3rd number = 1st number
(23,14,9) $\Rightarrow$ 14+9=23
(37,19,18) $\Rightarrow$ 19 +18 =37
Similarly,
(125,25,100) $\Rightarrow$ 25 +100 =125

7.(a) Logic : (1st number +3 × 2nd number)
(40,120,400) $\Rightarrow$ 40 +120 × 3 = 400
(18,20,78) $\Rightarrow$ 18 + 20 × 3 =78
Similarly,
(13,4,25) $\Rightarrow$ 29 + 23 × 3 = 98

8.(b) Logic : [(1st number + 2nd number)× 3] = 3rd number
(16,7,37) $\Rightarrow$ 16 + 7 × 3=37
(28,23,98) $\Rightarrow$ 28 + 9 × 3 =55
Similarly,
(13,4,25) $\Rightarrow$ 13 + 4 × 3 = 25

9.(d) Logic : [(2 × 1st number) + 3rd number] = 2nd number
In (4,13,5) $\Rightarrow$ (2×4+5) = 13
In (3,12,6) $\Rightarrow$ (2×3+6) =12
Similarly,
In (5,17,7) $\Rightarrow$ (2×5+7) =17

10.(b) Logic: [(First number × Third number) +1] = Second number
In (4, 25, 6) $\Rightarrow$ (4 × 6 + 1) = 25
In (8, 25, 3) $\Rightarrow$ (8 × 3 + 1) = 25
Similarly,
In (7, 22, 3) $\Rightarrow$ (7 × 3 + 1) = 22

11.(d) Logic: a: (5 × a - 5)
10:45 10: (5 × 10-5) = 45
6:25 6: (5 × 6-5)= 25
Similarly,
9:40=9:(5 × 9 - 5) = 40

12.(c) Logic - [First number x Second number = Third number]
(11,13,143) 11 × 13 = 143
(17, 11, 187) 17 × 11 = 187
Similarly,
(3, 4, 12) = 3 × 4 = 12

13.(b) Logic:- [Second number + Third number + 2 = First number]
(15, 9, 4) = 9 + 4 + 2 = 15
(7,2,3) 2 + 3 + 2 = 7
Similarly,
(19, 13, 4) 13 + 4 + 2 = 19

14.(a) Logic - (First number)^3 + (Second number)^3 = Third number
(3, 2, 35) $\Rightarrow$ $3^3 + 2^3 = 35$
(1, 4, 65) $\Rightarrow$ $1^3 + 4^3 = 65$
Similarly,
(7, 2, 351) $\Rightarrow$ $7^3 + 2^3 = 351$

15.(a) Logic:- (1st no.- 3rd no.) × 5 = 2nd no.

(36, 90, 18) $\Rightarrow$ (36 -18) × 5 = 90
(15, 35, 8) $\Rightarrow$ (15 - 8) × 5 = 35
Similarly,
(14, 45, 5) $\Rightarrow$ (14 - 5) × 5 = 45

16.(c) Logic:- [(2nd no. × 4)+ (3rd no. × 4)] = 1st no.
(452, 50, 63) $\Rightarrow$ (50 × 4) + (63 × 4) = 452
(260, 35, 30) $\Rightarrow$ (35 × 4) + (30 × 4) = 260
Similarly,
(260, 50, 15) $\Rightarrow$ (50 × 4)+ (15×4) = 260

17.(d) Logic:- $\frac{\text{1st no.} \times \text{3rd no.}}{2}$ = 2nd no.

(12, 42, 7) $\Rightarrow \frac{12 \times 7}{2} = 42$
(13, 52, 8) $\Rightarrow \frac{13 \times 8}{2} = 52$
(9, 18, 4) $\Rightarrow \frac{9 \times 4}{2} = 18$

18.(a) Logic: (First number + Third number) × 2 = Second number
(26+34) × 2 = 120
(14+41) × 2=110
Similarly,
(36+17) × 2=106

19.(a) Logic: a: b $\Rightarrow$ Their simplest form must be 5:8
In 30:48 $\Rightarrow$ (30+6): (48+6)=5:8
In 60:96 $\Rightarrow$ (60+12): (96+12)=5:8
In 45:72 $\Rightarrow$ (45÷9): (72-9)=5:8

20.(b) Logic: (First number × Third number) ÷ 4 = Second number
In (8, 12, 6):-(8 × 6) ÷ 4 = 12
In (9, 18, 8)-(9 × 8) ÷ 4 = 18
In (12, 24, 8):- (12 × 8) ÷ 4 = 24

21.(a) Logic: (n: n × 8+6)
(11:94) $\Rightarrow$ (11:11 × 8+6)
(18:150) $\Rightarrow$ (18:18 × 8+6)
Similarly,
(23:190) $\Rightarrow$ (23:23 × 8+6)

22.(d) Logic : (2nd number + 3rd)=1st number
(0.20, 5, 25) = 5 ÷ 25 = 0.20
(0.083, 12, 144) = 12 ÷144 = 0.083
Similarly,
(0.063, 16, 256) = 16 ÷ 256 = 0.0625 = 0.063

23.(b) Logic:- Third number × 2 = Second number + First number
Similarly,
(6, 22, 14)=14 × 2 = 22+6
(8, 30, 19)=19 × 2 = 30+8
(4, 18, 11)=11 × 2 = 18+4

24.(d) Logic:- First number x Second number = Third number
(22, 9, 198) $\Rightarrow$ 22 × 9=198
(19, 7, 133) $\Rightarrow$ 19 × 7 = 133
(26, 5, 130) $\Rightarrow$ 26 × 5 =130
(17,9, 157) $\Rightarrow$ 17 × 9 =153 (not follows)
(28, 7, 196) $\Rightarrow$ 28 × 7=196

25.(c) Logic :- (First number - Third number) = Second number
(70, 14, 56) = 70 - 56 = 14
(88, 30, 58)= 88 - 58= 30
Similarly,
(52, 19, 33) = 52 - 33=19

26.(b) Logic:- 2 × (First number)² = Second number
(8:128) = 2 × (8)² = 128
(11:242) = 2 × (11)² = 242
Similarly,
(6:72) = 2 × (6)² = 72

27.(c) Logic:- (First number - 2)² = Second number
(7:25) $\Rightarrow$ (7-2)² = 25
(4:4) $\Rightarrow$ (4-2)² = 4
Similarly,
(3:?) $\Rightarrow$ (3-2)² = 1

28.(d) Logic: (a: a²: a²+a)
In (5:25:30) $\Rightarrow$ 5: (5)²= 25:(5²+5)=30
In (16:256:272) $\Rightarrow$ 16: (16)² = 256:(16²+16) = 272
In (13:169:182) $\Rightarrow$ 13: (13)² = 169: (13²+13) = 182

29.(b) Logic : a : $\sqrt[3]{ax}$ ($\sqrt[3]{a}$ + 1)

In 729 : 90 → 729 : $\sqrt[3]{729}$ × ($\sqrt[3]{729}$ + 1) = 90
In 343 : 56 → 343 : $\sqrt[3]{343}$ × ($\sqrt[3]{343}$ + 1) = 56
In 512 : 72 → 512 : $\sqrt[3]{512}$ × ($\sqrt[3]{512}$ + 1) = 72

30.(d) Logic: a: a × (a^2 - a - 1)
In 17: 4607 ⟹ 17: 17 × (17^2-17-1) = 4607
In 11: 1199 ⟹ 11: 11 × (11^2-11-1) =1199
In 23:11615 ⟹ 23: 23 × (23^2-23-1) = 11615

31.(b) Logic: (n: n × 9-8)
(11:91) ⟹ (11:11 × 9-8)
(15:127) ⟹ (15:15 × 9-8)
Similarly,(18:154) ⟹ (18:18 × 9-8)

32.(a) Logic: {n: n × 7 : n × 9}
(23, 161, 207) ⟹ (23: 23 × 7: 23 × 9)
(47, 329, 423) ⟹ (47: 47 × 7:47 × 9)
Similarly,
(64, 448, 576) ⟹ (64: 64 × 7:64 × 9)

33.(d) Logic: {(n: n(n - 5)}
(18:234) ⟹ (18:18 × 13)
(14:126) ⟹ (14:14 × 9)
Similarly,
(16:176) ⟹ (16:16×11)

34.(b) Logic used:- (1st no. - 1)^3 = 2nd no.
6 :125 ⟹ (6 - 1)^3 = 125
2: 1 ⟹ (2 - 1)^3 = 1
6 : 4 ⟹ (5 - 1)^3 = 64

35.(a) Logic used:- (1st no.)^2 +(3rd no.)^2 = 2nd no.
(5,41,4) ⟹ $(5)^2 + (4)^2 = 41$
(2,68,8) ⟹ $(2)^2 + (8)^2 = 68$
Similarly,
(6,100,8) ⟹ $(6)^2 + (8)^2 = 100$

36.(b) Logic: (1st no. + $\sqrt{3rdno.}$ = 2nd no.
In(2, 8, 36) ⟹ (2 + $\sqrt{36}$) = 8
In (4, 9, 25) ⟹ (4 + $\sqrt{25}$) = 9
Similarly,
(13, 20, 49) ⟹ (13 + $\sqrt{49}$) = 20

37.(a) Logic: (1st no.)^2 + 3rd no. = (2nd no.) ^{2}
In (7, 11, 72) ⟹ $(7)^2 + 72 = (11)^2$
In (5, 8, 39) ⟹ $(5)^2 + 39 = (8)^2$
Similarly,
In (4, 7, 33) ⟹ $(4)^2 + 33 = (7)^2$

38.(b) Logic: (2nd no. + 3rd no.) = 1st no.
In (267, 128, 139) ⟹ (128+139) = 267
In (267, 132, 135) ⟹ (132+135) = 267
In (325, 112, 215) ⟹ (112 + 215)= 325
In (365, 154, 211) ⟹ (154+211) = 365
In (297, 146, 151) ⟹ (146+151) = 297
Hence, we can clearly see that, (325, 112, 215) is not following the pattern.

39.(b) Logic: (First number + Third number)^3 = Second number
(2, 125, 3) ⟹ $(2+3)^3=125$
(1, 64, 3) ⟹ $(1 + 3)^3 = 64$
Similarly,
(5, 512, 3) ⟹ $(5 + 3)^3=512$

40.(a) Pattern follows:- (2nd × 5) + 2 = 1st
(9 × 5) + 2 = 47
(14 × 5) + 2 = 72
(18 × 5) + 2 = 92

41.(d) Pattern follows:- First num × Second num = Third num
(16, 7, 112) ⟹ 16×7=112
(18, 3, 54) ⟹ 18 × 3 = 54
(14, 5, 70) ⟹ 14 × 5 = 70
(22, 7, 154) ⟹ 22 × 7 = 154
(26, 5, 132) ⟹ 26 x 5 = 130 (not follows)

42.(d) Logic used:- { First num × (First num-2) = Second num}
(12:120) = 12 × (12-2) = 120
(20:360) 20 × (20-2) = 360
Similarly,
(3:3) 3 × (3-2) = 3

43.(c) Logic: (n: nx2-1)
(7:13) ⟹ (7:7×2-1)
(16:31) ⟹ (16:16×2-1)
Similarly,
(46:91) ⟹ (46:46 × 2-1)

44.(d) Logic: (1st no. × 2nd no.) × 2 = 3rd no.
(7, 4, 56) $\Rightarrow$ 7 × 4 × 2 = 56
(8, 3, 48) $\Rightarrow$ 8 × 3 × 2 = 48
Similarly,
(9,10,180) $\Rightarrow$ 9× 10× 2 = 180

45.(c) Logic:(1st number - 3rd number)² = 2nd number
(9,16,5) $\Rightarrow$ (9 - 5)² = 16
(7,9,4) $\Rightarrow$ (7 - 4)²= 9
Similarly,
(11,36,5) $\Rightarrow$ (11 - 5)² = 36

46.(a) Logic: (2 × First number +Second number) = Third number
In (17, 24, 58) :- (2x 17 + 24) = 58
In (26, 37, 89):- (2 x26 + 37) = 89
Similarly,
(15, 17, 47):- (2 x 15 +17) = 47

47. (a) Logic: (First number × Third number) ÷ 2 = Second number
In (13, 39, 6):-(13×6)÷ 2 = 39
In (9, 18, 4) :- (9 × 4)÷ 2 = 18
In (12, 48, 8) :- (12 × 8)÷ 2 = 48

48.(d) Logic: (First number - Second number) × 4 = Third number
In (45, 15, 120):- (45 - 15) × 4 = 120
In (27, 8, 76) :- (27 - 8) × 4 = 76
In (56, 48, 32) :- (- (56 - 48) × 4 = 32

49.(d) Pattern follows:- { First num × Third num} + 4 = Second num
(12,112,9) $\Rightarrow$ {12 x 9} + 4 = 112
(10,84,8) $\Rightarrow$ {10 x 8} + 4 = 84
Similarly,
(18,94,5) $\Rightarrow$ {18 x 5} + 4 = 94

50.(b) Logic-a: $a^3 + a^2 + a$
In (4:84)? $4^3 + 4^2 + 4 = 84$
In (11:1463)? $11^3 + 11^2 + 11 = 1463$
In (13:2379)? $13^3 + 13^2 + 13 = 2379$

51.(d) Logic: (First number + 10 = Second number) and (Second number+ 5 = Third number)
In (3, 13, 18) $\Rightarrow$ +10=13 and 13+5= 18
In (29, 39, 44) $\Rightarrow$ 29+10=39 and 39 +5= 44
Similarly,
In (16, 26, 31) $\Rightarrow$ 16+10=26 and 26 + 5- 31

52.(d) Logic:- a: $(a)^3$
In (15:125) $\Rightarrow$ 15: $\frac{(15)^3}{3}$ = 125
In (27:729) $\Rightarrow$ 27: $\frac{(27)^3}{3}$ = 729
Similarly,
In (36:1728) $\Rightarrow$ 36: $\frac{(36)^3}{3}$ = 1728

53.(a) Logic: (Second number + Third number) × 2 = First number
In (42, 18, 3) :- (18 + 3) × 2 = 42
In (36, 14, 4) : - (14 + 4) × 2 = 36
Similarly,
In (34, 13, 4) :- (13 + 4) × 2 = 34

54.(c) Logic: a : $\sqrt{a}$ × 3
In 144 : 36:- 144: $\sqrt{144}$ × 3 = 36
In 81 : 27 :- 81 : $\sqrt{81}$ × 3 = 27
Similarly,
In196 : 42 :- 196 : $\sqrt{196}$ × 3 = 42

55.(d) Logic: (First number + Third number) × (First number + Third number) = Second number
In (4, 50, 6):-(4 + 6) x (4 + 6) = 50
In (13, 128, 3):- (13 + 3) x (13 + 3) = 128
Similarly,
In (15, 162, 3) :-(15 + 3) x (15 + 3) = 162

Sol.56.(d) Logic used:- { First num × 3} -2= Second num.
(11:31) $\Rightarrow$ {11 × 3} - 2 = 31
(14 : 40) $\Rightarrow$ {14 × 3} - 2 = 40
Similarity,
(9:25) $\Rightarrow$ {9 × 3} - 2 = 25

57.(b) Logic: (n × 4 : n - 8)
(76:11) $\Rightarrow$ (19 × 4:19 - 8)
(68:9) $\Rightarrow$ (17 × 4 : 17 - 8)
Similarly,
(88:14) $\Rightarrow$ (22 × 4 : 22 - 8)

58.(c) Logic: (Second number x Third number) = First number i.e.
In (60, 5, 6):- (5 x6) x 2 = 60
In (48, 8, 3):- (8 x 3) x 2 = 48
Similarly,
In (24, 4, 3):- (4 x 3) x 2 = 24

59.(b) Logic: (Second number + Third number)² = First number
In(144, 9, 3) :- (9 + 3)²= 144
In(225, 7, 8) :- (7 + 8)²= 225
Similarly,
In (64, 5, 3) :- (5 + 3)² = 64

60.(c) Logic: (First number + Third number) ÷ 2 =Second number
In (71, 37, 3) (71 + 3) ÷ 2 = 37
In (34, 23, 12) (34 + 12) ÷ 2 = 23
Similarly,
In (19, 55, 91) (19 + 91) ÷ 2 = 55

61.(a) Logic: (First number + Second number)² ÷ 2 = Third number
In (2,4,18) $\Rightarrow$ (2 + 4)² ÷ 2 = 18
In (1,9,50) $\Rightarrow$ (1 + 9)² ÷ 2 = 50
Similarly,
In (3,5,32) $\Rightarrow$ (3 + 5)² ÷ 2 = 32

62.(b) Logic:- (First number × Third number = Second number)
In (5, 35, 7) $\Rightarrow$ 5×7=35
In (8, 32, 4) $\Rightarrow$ 8×4=32
Similarly,
In (3, 27, 9) $\Rightarrow$ 3×9=27

63.(b) Logic:- First number + 100 = Second number + 1000 = Third number
In (99, 199, 1199) $\Rightarrow$ 99+100=199, 199+1000=1199
In(15, 115, 1115) $\Rightarrow$ 15+100=115, 115+1000 = 1115
Similarly,
(33,133,1133) $\Rightarrow$ 33 +100 = 133,133 ,1000 =1133

64.(d) Logic used:- (First num + Third num) × 3 = Second num
(12, 51, 5) $\Rightarrow$ (12+ 5) × 3 = 51
(8, 30, 2) $\Rightarrow$ (8 + 2) × 3 = 30
Similarly,
(11, 51, 6) $\Rightarrow$ (11+6) × 3 = 51

Sol.65.(a) Logic : $\frac{(1\text{st no.} + 3 \times 2\text{nd no.})}{2}$ = 3rd no.

(52, 10, 41) $\Rightarrow$ $\frac{(52+3\times10)}{2}$ = 41

(46, 48, 50) $\Rightarrow$ $\frac{(46+3\times48)}{2}$ = 50

(68, 26, 73) $\Rightarrow$ $\frac{(68+3\times26)}{2}$ = 73

66.(c) Logic: a:a × (a × 7)
In (8:448) $\Rightarrow$ 8:8 × (8 × 7) = 448
In (9:567) $\Rightarrow$ 9:9 × (9 × 7) = 567
In (11:847) $\Rightarrow$ 11:11 × (11 x 7) = 847

67.(c) Logic: First number + Third number = Second number
In (13, 27, 14) $\Rightarrow$ 13+14=27
In (19, 23, 4) $\Rightarrow$ 19+4=23
Similarly,
In(25, 27, 2) $\Rightarrow$ 25+2=27

Sol.68.(d) Logic: (First number - Third number) × 2 = Second number
In (182,170,97) $\Rightarrow$ (182 - 97) × 2 = 170
In (156,128,92) $\Rightarrow$ (156 - 92) × 2 = 128
Similarly,
In (138, 130, 73) $\Rightarrow$ (138-73) × 2 = 130

69.(a) Logic - (Third number × 3 - Second number) = First number
(56,22,26) $\Rightarrow$ (26 × 3 - 22) = 56
(34,20,18) $\Rightarrow$ (18 × 3 - 20) = 34
Similarly,
(78,54,44) $\Rightarrow$ (44 × 3 - 54) = 78

70.(a) Logic :- 1st no.+ 3rd no. ÷ 2
= $\sqrt{2nd\ \text{no.}}$

$(21,225,9) \Rightarrow \frac{(21+9)}{2} = \sqrt{225}$

$(12,49,2) \Rightarrow \frac{(12+2)}{2} = \sqrt{49}$

Similarly,

$(14,64,2) \Rightarrow \frac{(14+2)}{2} = \sqrt{64}$

71.(b) Logic: Second number + $\sqrt{\text{Third number}}$ = First number

$(76,75,1) \Rightarrow 75 + \sqrt{1} = 76$

$(90,87,9) \Rightarrow 87 + \sqrt{9} = 90$

Similarly,

$(56,48,64) \Rightarrow 48 + \sqrt{64} = 56$

Sol.72.(c) Logic:- a:(a^3) - 13

In 7 : 330 $\Rightarrow 7^3 - 13 = 330$

In 6 : 203 $\Rightarrow 6^3 - 13 = 203$

ln9 : 716 $\Rightarrow 9^3 - 13 = 716$

Sol.73.(b) Logic: (Third number - Second number) × 2 = First number

In (56,6,34) $\Rightarrow$ (34 - 6) × 2 = 56

In (102,27,78) $\Rightarrow$ (78 - 27) × 2 = 102

Similarly,

In (76,34,72) $\Rightarrow$ (72 - 34) × 2 = 76

74.(d) Logic: a : a^2 - 16

In(27:713) $\Rightarrow 27^2 - 16 = 713$

In(32:1008) $\Rightarrow 32^2 - 16 = 1008$

In(35:1209) $\Rightarrow 35^2 - 16 = 1209$

75.(a) Logic: sum of all given number = 85

(21,33,31) $\Rightarrow$ 21 + 33 + 31 = 85

(42,17,26) $\Rightarrow$ 42 + 17 + 26 = 85

Similarly,

(36,14,35) $\Rightarrow$ 36 + 14 + 35 = 85

76.(b) Logic (1st number × 3 +2nd) = 3rd number

(4,21,33) $\Rightarrow$ (4 × 3 + 21) = 33

(10,111,141) $\Rightarrow$ (10 × 3 + 111) = 141

Similarly,

(25,53,128) $\Rightarrow$ (25 × 3 + 53) = 128

77.(d) Logic - (1st no.) × (1st no.- 1) = 2nd no.

(12:132) $\Rightarrow$ (12) × (12 - 1) = 132

(20:380) $\Rightarrow$ (20) × (20 - 1) = 380

Similarly,

(2:2) $\Rightarrow$ (2) × (2 - 1) = 2

78.(d) Logic used:- {(First num)^3 - 3 = Second num}

(4:61) $\Rightarrow (4)^3 - 3 = 61$

(9:726) $\Rightarrow (9)^3 - 3 = 726$

Similarly,

(6:213) $\Rightarrow (6)^3 - 3 = 213$

79.(a) Logic used:- {First num + last num} × 7 =Second num

(5,98,9) $\Rightarrow$ {9+5} × 7=98

(10,168,14) $\Rightarrow$ {10+14} × 7 = 168

Similarly,

(1,28,3) $\Rightarrow$ {3+1} × 7=28

80.(c) Logic: First number + Second number = Third number

In (168, 122, 290) $\Rightarrow$ 168+122=290

In (198, 112, 310) $\Rightarrow$ 198+112=310

In (226, 148, 374) $\Rightarrow$ 226+148=374

In (126, 132, 258) $\Rightarrow$ 126+132=258

Hence, we can clearly see that, (236, 118,356) is not following the pattern.

81.(c) Logic: a : $(a + 6)^2$

In (14:400) $\Rightarrow$ 14 : $(14 + 6)^2$ = 400

In (37:1849) $\Rightarrow$ 37 : $(37 + 6)^2$ = 1849

In (42: 2304) $\Rightarrow$ 42: $(42 + 6)^2$ = 2304

82.(c) Logic: (First number)^2 + (Third number)^2 = Second number

In(12, 313, 13):- $(12)^2 + (13)^2 = 313$

In(11, 185, 8):- $(11)^2 + (8)^2 = 185$

Similarly,

In (9, 90, 3) :- $(9)^2 + (3)^2 = 90$

83.(d) Logic: First number × Second number × 4 = Third number

In (6, 17, 408)→ 6 × 17 × 4 = 408

In (13, 27, 1404) → 13 × 27 × 4 = 1404

Similarly,

In (4, 26, 416)→ 4 × 26 × 4 = 416

84.(b) Logic: a: a × $(a + \frac{a}{2})$

In 8 : 96 :-8 × $(8 + \frac{8}{2})$ = 96

In 6 : 54 :- 6 × $(6+\frac{6}{2})$ = = 5412

In 12 : 216 :-12 × $(12+\frac{12}{2})$ = 216

85.(d) Logic used:- First num + $\sqrt{\text{First number}}$ = Second num
(16:20) ⟹ 16 + v16 = 20
(49:56) ⟹ 49 + v49 = 56
Similarly,
(256:272) ⟹ 256 + v256 = 272

86.(b) Logic used:- (First num)² + (Second num)²
= Third num
(2,4,20) ⟹ (2)² + (4)² = 20
(4,5,41) ⟹ (4)²+ (5)² = 41
Similarly,
(4,3,25) ⟹ (4)² + (3)² = 25

Sol.87.(b) Logic used:- {First num = Second num × Third num}
(76, 4, 19) ⟹ 76=4 × 19
(98, 2, 49) ⟹ 98=2 × 49
Similarly,
(72, 4, 18) ⟹ 72=18 × 4

88.(a) Logic: (First number - Second 2 number)² = Third number
In (16, 7, 81) :- (16 - 7)² = 81
In (24, 16, 64) :- (24 - 16)² = 64
Similarly,
In (13, 7, 36) :- (13 - 7)² = 36

89.(c) Logic: a : (a + 8) ÷ 4
In 68:19 ⟹ 68 : (68 + 8) ÷ 4 = 19
In 76:21 ⟹ 76 : (76 + 8) ÷ 4 = 21
Similarly,
164:43 ⟹ 164 : (164 + 8) ÷ 4 = 43

90.(d) Logic used:-(First num -Third num)³ = Second num
(9,343,2) ⟹ (9 - 2)³ = 343
(12,729,3) ⟹ (12 - 3)³ = 729
Similarly,
(12,125,7) ⟹ (12 - 7)³ = 125

91.(b) Logic used:- (First num × Third num) -2 = Second num
(3,16,6) ⟹ (3 × 6) - 2 = 16
(4,22,6) ⟹ (4 × 6) - 2 = 22
Similarly,
(9,70,8) ⟹ (9 × 8) - 2 = 70

92.(c) Logic used:-(First num +Second num) × 15 = Third num
(4,7,165) ⟹ (4 + 7) x 15 = 165
(14,26,600)⟹ (14 + 26) x 15 = 600
Similarly,
(3,6,135) ⟹ (3 + 6) x 15 = 135

93.(d) (5, 2, 23) = 5^2-2 = 23
(6, 2, 34) = 6^2 - 2 = 34
Similarly,
(3, 2, 7) = 3^2 - 2 = 7

94.(a) Logic - (Second number + Third number) × 2 = First number
(60,17, 13) = (13 + 17) × 2 = 60
(62,14, 17) = (14 + 17) × 2 = 62
Similarly, in option (a),
(56, 15, 13) = (15 + 13) × 2 = 56

95.(c) Logic :- 3rd no. × 1st no. = (2nd no.)²
(4, 6, 9) = 9 × 4 = 6^2
(25, 10, 4) = 4 × 25 = 10^2
Similarly,
(6, 36, 216) = 216 × 6 = 36^2

96.(a) Logic :- 1st no. × 3 - 6 = 2nd no.
6 × 3 - 6 = 12
9 × 3 - 6 = 21
Similarity,
3 × 3 - 6 = 3